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☐ 1: Nature 1999 Feb 18;397(6720):579-83

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PubMed

Comment in:

- [Nature. 1999 Feb 18;397\(6720\):568-9.](#)

nature

A mammalian protein with specific demethylase activity for mCpG DNA.

PubMed
Services

Bhattacharya SK, Ramchandani S, Cervoni N, Szyf M.

Department of Pharmacology and Therapeutics, McGill University, Montreal, QC, Canada.

Related
Resources

DNA-methylation patterns are important for regulating genome functions, and are determined by the enzymatic processes of methylation and demethylation. The demethylating enzyme has now been identified: a mammalian complementary DNA encodes a methyl-CpG-binding domain, bears a demethylase activity that transforms methylated cytosine bases to cytosine, and demethylates a plasmid when the cDNA is translated or transiently transfected into human embryonal kidney cells in vitro. The discovery of this DNA demethylase should provide a basis for the molecular and developmental analysis of the role of DNA methylation and demethylation.

PMID: 10050851 [PubMed - indexed for MEDLINE]

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FILE 'HOME' ENTERED AT 16:55:01 ON 15 MAY 2003)

FILE 'CAPLUS' ENTERED AT 16:55:38 ON 15 MAY 2003

L1	0 S DNA DEMETHYLASE (A) INHIBITOR
L2	29 S DNA DEMETHYLASE
L3	0 S L2 (A) INHIBITION
L4	0 S IMIDAZOLE (A) DNA DEMETHYLASE

2 ANSWER 22 OF 29 CAPLUS COPYRIGHT 2003 ACS

AN 1999:218801 CAPLUS

DN 131:29241

TI **DNA demethylase** is a processive enzyme

AU Cervoni, Nadia; Bhattacharya, Sanjoy; Szyf, Moshe

CS Department of Pharmacology, McGill University, Montreal, QC, H3G 1Y6,
Can.

SO Journal of Biological Chemistry (1999), 274(13), 8363-8366

CODEN: JBCHA3; ISSN: 0021-9258

PB American Society for Biochemistry and Molecular Biology

DT Journal

LA English

CC 7-4 (Enzymes)

AB DNA methylation patterns are generated during development by a sequence
of

methylation and demethylation events. We have recently demonstrated that
mammals bear a bona fide demethylase enzyme that removes Me groups from
methylated cytosines. A general genome wide demethylation occurs early

in

development and in differentiating cell lines. This manuscript tests the
hypothesis that the demethylase enzyme is a processive enzyme. Using
bisulfite mapping, this report demonstrates that demethylase is a
processive enzyme and that the rate-limiting step in demethylation is the
initiation of demethylation. Initiation of demethylation is detd. by the
properties of the sequence. Once initiated, demethylation progresses
processively. We suggest that these data provide a mol. explanation for
global hypomethylation.

ST **DNA demethylase** hypomethylation



PubMed	Nucleotide	Protein	Genome	Structure	PMC	Taxonomy	OMIM	Books	
Search Protein		▼ for DNA demethylase		Go		Clear			
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Entrez Protein

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- ☐ **1: NP_004167** BLink, Domains, Links
sterol regulatory element binding transcription factor 1; sterol regulatory element binding protein-1 [Homo sapiens]
gi|22547195|ref|NP_004167.3|[22547195]
- ☐ **2: XP_016472** BLink, Links
similar to Cytochrome P450 51A1 (CYPL1) (P450L1) (Sterol 14-alpha demethylase) (Lanosterol 14-alpha demethylase) (LDM) (P450-14DM) [Homo sapiens]
gi|13650621|ref|XP_016472.1|[13650621]
- ☐ **3: NP_056647** BLink, Domains, Links
methyl-CpG binding domain protein 2 testis-specific isoform [Homo sapiens]
gi|7710145|ref|NP_056647.1|[7710145]
- ☐ **4: NP_003917** BLink, Domains, Links
methyl-CpG binding domain protein 3 [Homo sapiens]
gi|4505119|ref|NP_003917.1|[4505119]
- ☐ **5: NP_003918** BLink, Domains, Links
methyl-CpG binding domain protein 2 isoform 1 [Homo sapiens]
gi|4505117|ref|NP_003918.1|[4505117]
- ☐ **6: P10614** BLink, Domains, Links
Cytochrome P450 51 (CYPL1) (P450-L1A1) (Sterol 14-alpha demethylase) (Lanosterol 14-alpha demethylase) (P450-14DM)
gi|117176|sp|P10614|CP51_YEAST[117176]
- ☐ **7: P14263** BLink, Domains, Links
Cytochrome P450 51 (CYPL1) (P450-L1A1) (Sterol 14-alpha demethylase) (Lanosterol 14-alpha demethylase) (P450-14DM)
gi|117175|sp|P14263|CP51_CANTR[117175]
- ☐ **8: BAC65961** BLink, Domains, Links
putative cytochrome P450 (Obtusifolios 14-alpha demethylase) [Oryza sativa (japonica cultivar-group)]
gi|29027845|dbj|BAC65961.1|[29027845]

Related
resources

- ☐ **9: NP_056723** BLink, Domains, Links
methyl-CpG binding domain protein 1 isoform PCM1 [Homo sapiens]
gi|21464119|ref|NP_056723.2|[21464119]
- ☐ **10: NP_056671** BLink, Domains, Links
methyl-CpG binding domain protein 1 isoform 1 [Homo sapiens]
gi|21464117|ref|NP_056671.2|[21464117]
- ☐ **11: NP_056670** BLink, Domains, Links
methyl-CpG binding domain protein 1 isoform 2 [Homo sapiens]
gi|21464115|ref|NP_056670.2|[21464115]
- ☐ **12: NP_604391** BLink, Domains, Links
cAMP responsive element binding protein 1 isoform B; cAMP-response
element-binding protein-1; active transcription factor CREB; transactivator protein
[Homo sapiens]
gi|19745184|ref|NP_604391.1|[19745184]
- ☐ **13: NP_002375** BLink, Domains, Links
methyl-CpG binding domain protein 1 isoform 4 [Homo sapiens]
gi|7710143|ref|NP_002375.1|[7710143]
- ☐ **14: NP_056669** BLink, Domains, Links
methyl-CpG binding domain protein 1 isoform 3 [Homo sapiens]
gi|7710135|ref|NP_056669.1|[7710135]
- ☐ **15: NP_004370** BLink, Domains, Links
cAMP responsive element binding protein 1 isoform A; cAMP-response
element-binding protein-1; active transcription factor CREB; transactivator protein
[Homo sapiens]
gi|4758054|ref|NP_004370.1|[4758054]
- ☐ **16: BAC48664** BLink, Domains, Links
vanillate O-demethylase oxidoreductase [Bradyrhizobium japonicum USDA 110]
gi|27351658|dbj|BAC48664.1|[27351658]
- ☐ **17: BAC47655** BLink, Domains, Links
vanillate O-demethylase oxygenase subunit [Bradyrhizobium japonicum USDA 110]
gi|27350645|dbj|BAC47655.1|[27350645]
- ☐ **18: NP_770039** BLink, Domains, Links
vanillate O-demethylase oxidoreductase [Bradyrhizobium japonicum]
gi|27378510|ref|NP_770039.1|[27378510]
- ☐ **19: NP_769030** BLink, Domains, Links
vanillate O-demethylase oxygenase subunit [Bradyrhizobium japonicum]
gi|27377501|ref|NP_769030.1|[27377501]

☐ 20: XP_192834[BLink](#), [Domains](#), [Links](#)

methyl-CpG binding domain protein 2 [Mus musculus]
gi|25054585|ref|XP_192834.1|[25054585]

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☐ **21: XP_227444** BLink, Domains, Links
similar to Histone-lysine N-methyltransferase, H3 lysine-9 specific 4 (Histone H3-K9 methyltransferase 4) (H3-K9-HMTase 4) (SET domain bifurcated 1) (ERG-associated protein with SET domain) (ESET) [Rattus norvegicus]
gi|27693569|ref|XP_227444.1|[27693569]

☐ **22: XP_222315** BLink, Domains, Links
similar to Bromodomain adjacent to zinc finger domain 2A (Transcription termination factor-I interacting protein 5) (TTF-I interacting protein 5) (Tip5) [Rattus norvegicus]
gi|27710504|ref|XP_222315.1|[27710504]

☐ **23: XP_215740** BLink, Domains, Links
similar to Bromodomain adjacent to zinc finger domain 2B (hWALp4) [Rattus norvegicus]
gi|27699091|ref|XP_215740.1|[27699091]

Related
resources

☐ **24: BAC55657** BLink, Domains, Links
putative cytochrome P450(Obtusifoliol 14-alpha demethylase) [Oryza sativa (japonica cultivar-group)]
gi|27817891|dbj|BAC55657.1|[27817891]

☐ **25: NP_108417** BLink, Domains, Links
probable N-methylproline demethylase (stahydrine utilization protein stcD) [Mesorhizobium loti]
gi|13476848|ref|NP_108417.1|[13476848]

☐ **26: NP_107668** BLink, Domains, Links
vanillate O-demethylase oxidoreductase [Mesorhizobium loti]
gi|13476098|ref|NP_107668.1|[13476098]

☐ **27: NP_498673** BLink, Domains, Links
Methyl-CpG binding domain and DDT domain and PHD-finger and Bromodomain containing protein [Caenorhabditis elegans]
gi|17557087|ref|NP_498673.1|[17557087]

☐ **28: NP_498848** BLink, Domains, Links
DNA topoisomerase II [Caenorhabditis elegans]

gi|17554480|ref|NP_498848.1|[17554480]

- ☐ **29: A31854** BLink, Domains, Links
lanosterol 14alpha-demethylase (EC 1.14.14.-) cytochrome P450 51 - yeast (*Candida tropicalis*)
gi|83929|pir|A31854[83929]
- ☐ **30: A27491** BLink, Domains, Links
lanosterol 14alpha-demethylase (EC 1.14.14.-) cytochrome P450 51 - yeast (*Saccharomyces cerevisiae*)
gi|82967|pir|A27491[82967]
- ☐ **31: Q12645** BLink, Domains, Links
Pisatin demethylase (Cytochrome P450 57A1)
gi|3929362|sp|Q12645|PID9_FUSSO[3929362]
- ☐ **32: BAC20841** BLink, Domains, Links
putative cytochrome P450(Obtusifoliol 14-alpha demethylase) [*Oryza sativa* (japonica cultivar-group)]
gi|23617163|dbj|BAC20841.1|[23617163]
- ☐ **33: BAC20835** BLink, Domains, Links
putative cytochrome P450(Obtusifoliol 14-alpha demethylase) [*Oryza sativa* (japonica cultivar-group)]
gi|23617157|dbj|BAC20835.1|[23617157]
- ☐ **34: NP_524468** BLink, Domains, Links
six-banded [*Drosophila melanogaster*]
gi|17738157|ref|NP_524468.1|[17738157]
- ☐ **35: AAH32322** BLink, Domains, Links
cytochrome P450, 51 (lanosterol 14-alpha-demethylase) [*Homo sapiens*]
gi|21619563|gb|AAH32322.1|[21619563]
- ☐ **36: AAA53284** BLink, Domains, Links
cytochrome P450 lanosterol 14-alpha-demethylase [*Candida tropicalis*]
gi|576547|gb|AAA53284.1|[576547]
- ☐ **37: CAB58427** BLink, Links
P450 lanosterol 14a demethylase [*Cryptococcus neoformans* var. *neoformans*]
gi|6065767|emb|CAB58427.1|[6065767]
- ☐ **38: BAB53878** BLink, Domains, Links
probable N-methylproline demethylase [*Mesorhizobium loti*]
gi|14027609|dbj|BAB53878.1|[14027609]
- ☐ **39: BAB53454** BLink, Domains, Links
vanillate O-demethylase oxidoreductase [*Mesorhizobium loti*]

gi|14026858|dbj|BAB53454.1|[14026858]

☐ 40: BAA15607

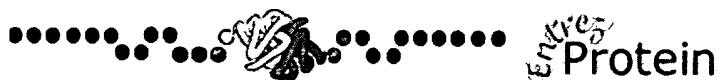
[BLink](#), [Domains](#), [Links](#)

Vanillate demethylase oxidoreductase (EC 1.-.-.) (Vanillate degradation
ferredoxin-like protein). [Escherichia coli]

gi|1736436|dbj|BAA15607.1|[1736436]

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☐ 41: [BAA15598](#)[BLink](#), [Domains](#), [Links](#)

Vanillate demethylase oxidoreductase (EC 1.-.-.) (Vanillate degradation ferredoxin-like protein). [Escherichia coli]
gi|1736426|dbj|BAA15598.1|[1736426]

☐ 42: [AAA34379](#)[BLink](#), [Domains](#), [Links](#)

14-alpha-demethylase (14DM)
gi|170946|gb|AAA34379.1|[170946]

Related
resources

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☐ 1: NP_056647. methyl-CpG bindin...[gi:7710145]

[BLink](#), [Domains](#), [Links](#)

LOCUS MBD2 302 aa linear PRI 06-APR-2003

DEFINITION methyl-CpG binding domain protein 2 testis-specific isoform [Homo sapiens].

ACCESSION NP_056647

VERSION NP_056647.1 GI:7710145

DBSOURCE REFSEQ: accession NM_015832.2

KEYWORDS .

SOURCE Homo sapiens (human)

ORGANISM Homo sapiens

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

REFERENCE 1 (residues 1 to 302)

AUTHORS Krithivas,A., Fujimuro,M., Weidner,M., Young,D.B. and Hayward,S.D.

TITLE Protein interactions targeting the latency-associated nuclear antigen of Kaposi's sarcoma-associated herpesvirus to cell chromosomes

JOURNAL J. Virol. 76 (22), 11596-11604 (2002)

MEDLINE 22276359

PUBMED 12388720

REMARK GeneRIF: interacts with latency-associated nuclear antigen of Kaposi's Sarcoma-associated herpesvirus (KSHV) to tether KSHV to cell chromosomes

REFERENCE 2 (residues 1 to 302)

AUTHORS Brackertz,M., Boeke,J., Zhang,R. and Renkawitz,R.

TITLE Two highly related p66 proteins comprise a new family of potent transcriptional repressors interacting with MBD2 and MBD3

JOURNAL J. Biol. Chem. 277 (43), 40958-40966 (2002)

MEDLINE 22287387

PUBMED 12183469

REMARK GeneRIF: interaction with two highly related p66 proteins

REFERENCE 3 (residues 1 to 302)

AUTHORS Detich,N., Theberge,J. and Szyf,M.

TITLE Promoter-specific activation and demethylation by MBD2/demethylase

JOURNAL J. Biol. Chem. 277 (39), 35791-35794 (2002)

MEDLINE 22229441

PUBMED 12177048

REMARK GeneRIF: MBD2 protein activates CpG sites within the promoter region of reporter genes

REFERENCE 4 (residues 1 to 302)

AUTHORS Bakker,J., Lin,X. and Nelson,W.G.

TITLE Methyl-CpG binding domain protein 2 represses transcription from hypermethylated pi-class glutathione S-transferase gene promoters in hepatocellular carcinoma cells

JOURNAL J. Biol. Chem. 277 (25), 22573-22580 (2002)

MEDLINE 22063361

PUBMED 11960994

REMARK GeneRIF: Methyl-CpG binding domain protein 2 represses transcription from hypermethylated pi-class glutathione S-transferase gene promoters in hepatocellular carcinoma cells

REFERENCE 5 (residues 1 to 302)

AUTHORS Ng,H.H., Zhang,Y., Hendrich,B., Johnson,C.A., Turner,B.M., Erdjument-Bromage,H., Tempst,P., Reinberg,D. and Bird,A.

TITLE MBD2 is a transcriptional repressor belonging to the MeCP1 histone deacetylase complex
JOURNAL Nat. Genet. 23 (1), 58-61 (1999)
MEDLINE [99400553](#)
PUBMED [10471499](#)
REFERENCE 6 (residues 1 to 302)
AUTHORS Hendrich,B., Abbott,C., McQueen,H., Chambers,D., Cross,S. and Bird,A.
TITLE Genomic structure and chromosomal mapping of the murine and human Mbd1, Mbd2, Mbd3, and Mbd4 genes
JOURNAL Mamm. Genome 10 (9), 906-912 (1999)
MEDLINE [99373255](#)
PUBMED [10441743](#)
REFERENCE 7 (residues 1 to 302)
AUTHORS Bhattacharya,S.K., Ramchandani,S., Cervoni,N. and Szyf,M.
TITLE A mammalian protein with specific demethylase activity for mCpG DNA
JOURNAL Nature 397 (6720), 579-583 (1999)
MEDLINE [99158138](#)
PUBMED [10050851](#)
REFERENCE 8 (residues 1 to 302)
AUTHORS Hendrich,B. and Bird,A.
TITLE Identification and characterization of a family of mammalian methyl-CpG binding proteins
JOURNAL Mol. Cell. Biol. 18 (11), 6538-6547 (1998)
MEDLINE [98449942](#)
PUBMED [9774669](#)
REFERENCE 9 (residues 1 to 302)
AUTHORS Scanlan,M.J., Chen,Y.T., Williamson,B., Gure,A.O., Stockert,E., Gordan,J.D., Tureci,O., Sahin,U., Pfreundschuh,M. and Old,L.J.
TITLE Characterization of human colon cancer antigens recognized by autologous antibodies
JOURNAL Int. J. Cancer 76 (5), 652-658 (1998)
MEDLINE [98272252](#)
PUBMED [9610721](#)
COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from [AF120989.1](#), [AF120989.1](#) and [AF120994.1](#).

Summary: DNA methylation is the major modification of eukaryotic genomes and plays an essential role in mammalian development. Human proteins MECP2, MBD1, MBD2, MBD3, and MBD4 comprise a family of nuclear proteins related by the presence in each of a methyl-CpG binding domain (MBD). Each of these proteins, with the exception of MBD3, is capable of binding specifically to methylated DNA. MECP2, MBD1 and MBD2 can also repress transcription from methylated gene promoters. MBD2 may function as mediators of the biological consequences of the methylation signal. It is also reported that the MBD2 protein functions as a demethylase to activate transcription, as DNA methylation causes gene silencing. However, MBD2 in HeLa cells does not demethylate DNA, probably due to HeLa cell's using an alternative pathway involving MBD2 to silence methylated genes.

Transcript Variant: This variant (testis-specific) includes an alternate exon located within intron 2 resulting in a distinct COOH terminus.

FEATURES

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	/chromosome="18"
	/map="18q21"
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	/product="methyl-CpG binding domain protein 2 testis-specific isoform"

Region 147..217
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chromosomal proteins including the Methyl CpG binding
proteins"
/note="tam"
/db_xref="CDD:LOAD tam"
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/gene="MBD2"
/coded_by="NM_015832.2:230..1138"
/db_xref="LocusID:8932"
/db_xref="MIM:603547"
ORIGIN
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121 aprrepvpfp sgsagpgprg pratesgkrm dcpalppgwk keevirksgl sagksdvyf
181 spsgkkfrsk pqlarylnt vdlssfdfrt gkmmpsklqk nkqrlrndpl nqnklrwnth
241 rpapwhalsr lc llircllc le cayplplh lvnsyssktq lhclhlweac paysrqnqsf
301 pp
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☐ 1: NP_056647. methyl-CpG bindin...[gi:7710145]

[BLink](#), [Domains](#), [Links](#)

LOCUS MBD2 302 aa linear PRI 06-APR-2003

DEFINITION methyl-CpG binding domain protein 2 testis-specific isoform [Homo sapiens].

ACCESSION NP_056647

VERSION NP_056647.1 GI:7710145

DBSOURCE REFSEQ: accession [NM_015832.2](#)

KEYWORDS .

SOURCE Homo sapiens (human)

ORGANISM [Homo sapiens](#)
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

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JOURNAL J. Virol. 76 (22), 11596-11604 (2002)

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REMARK GeneRIF: interacts with latency-associated nuclear antigen of Kaposi's Sarcoma-associated herpesvirus (KSHV) to tether KSHV to cell chromosomes

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JOURNAL J. Biol. Chem. 277 (43), 40958-40966 (2002)

MEDLINE 22287387

PUBMED 12183469

REMARK GeneRIF: interaction with two highly related p66 proteins

REFERENCE 3 (residues 1 to 302)

AUTHORS Detich,N., Theberge,J. and Szyf,M.

TITLE Promoter-specific activation and demethylation by MBD2/demethylase

JOURNAL J. Biol. Chem. 277 (39), 35791-35794 (2002)

MEDLINE 22229441

PUBMED 12177048

REMARK GeneRIF: MBD2 protein activates CpG sites within the promoter region of reporter genes

REFERENCE 4 (residues 1 to 302)

AUTHORS Bakker,J., Lin,X. and Nelson,W.G.

TITLE Methyl-CpG binding domain protein 2 represses transcription from hypermethylated pi-class glutathione S-transferase gene promoters in hepatocellular carcinoma cells

JOURNAL J. Biol. Chem. 277 (25), 22573-22580 (2002)

MEDLINE 22063361

PUBMED 11960994

REMARK GeneRIF: Methyl-CpG binding domain protein 2 represses transcription from hypermethylated pi-class glutathione S-transferase gene promoters in hepatocellular carcinoma cells

REFERENCE 5 (residues 1 to 302)

AUTHORS Ng,H.H., Zhang,Y., Hendrich,B., Johnson,C.A., Turner,B.M., Erdjument-Bromage,H., Tempst,P., Reinberg,D. and Bird,A.

TITLE MBD2 is a transcriptional repressor belonging to the MeCP1 histone deacetylase complex
 JOURNAL Nat. Genet. 23 (1), 58-61 (1999)
 MEDLINE 99400553
 PUBMED 10471499
 REFERENCE 6 (residues 1 to 302)
 AUTHORS Hendrich,B., Abbott,C., McQueen,H., Chambers,D., Cross,S. and Bird,A.
 TITLE Genomic structure and chromosomal mapping of the murine and human Mbd1, Mbd2, Mbd3, and Mbd4 genes
 JOURNAL Mamm. Genome 10 (9), 906-912 (1999)
 MEDLINE 99373255
 PUBMED 10441743
 REFERENCE 7 (residues 1 to 302)
 AUTHORS Bhattacharya,S.K., Ramchandani,S., Cervoni,N. and Szyf,M.
 TITLE A mammalian protein with specific demethylase activity for mCpG DNA
 JOURNAL Nature 397 (6720), 579-583 (1999)
 MEDLINE 99158138
 PUBMED 10050851
 REFERENCE 8 (residues 1 to 302)
 AUTHORS Hendrich,B. and Bird,A.
 TITLE Identification and characterization of a family of mammalian methyl-CpG binding proteins
 JOURNAL Mol. Cell. Biol. 18 (11), 6538-6547 (1998)
 MEDLINE 98449942
 PUBMED 9774669
 REFERENCE 9 (residues 1 to 302)
 AUTHORS Scanlan,M.J., Chen,Y.T., Williamson,B., Gure,A.O., Stockert,E., Gordan,J.D., Tureci,O., Sahin,U., Pfreundschuh,M. and Old,L.J.
 TITLE Characterization of human colon cancer antigens recognized by autologous antibodies
 JOURNAL Int. J. Cancer 76 (5), 652-658 (1998)
 MEDLINE 98272252
 PUBMED 9610721
 COMMENT REVIEWED REFSEQ: This record has been curated by NCBI staff. The reference sequence was derived from [AF120989.1](#), [AF120989.1](#) and [AF120994.1](#).

Summary: DNA methylation is the major modification of eukaryotic genomes and plays an essential role in mammalian development. Human proteins MECP2, MBD1, MBD2, MBD3, and MBD4 comprise a family of nuclear proteins related by the presence in each of a methyl-CpG binding domain (MBD). Each of these proteins, with the exception of MBD3, is capable of binding specifically to methylated DNA. MECP2, MBD1 and MBD2 can also repress transcription from methylated gene promoters. MBD2 may function as mediators of the biological consequences of the methylation signal. It is also reported that the MBD2 protein functions as a demethylase to activate transcription, as DNA methylation causes gene silencing. However, MBD2 in HeLa cells does not demethylate DNA, probably due to HeLa cell's using an alternative pathway involving MBD2 to silence methylated genes.

Transcript Variant: This variant (testis-specific) includes an alternate exon located within intron 2 resulting in a distinct COOH terminus.

FEATURES	Location/Qualifiers
source	1..302 /organism="Homo sapiens" /db_xref="taxon:9606" /chromosome="18" /map="18q21"
<u>Protein</u>	1..302 /product="methyl-CpG binding domain protein 2 testis-specific isoform"

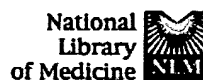
Region 147..217
/region_name="DNA binding domain found in several
chromosomal proteins including the Methyl CpG binding
proteins"
/note="tam"
/db_xref="CDD:LOAD tam"
CDS 1..302
/gene="MBD2"
/coded_by="NM_015832.2:230..1138"
/db_xref="LocusID:8932"
/db_xref="MIM:603547"

ORIGIN

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1 mrahpggggrc cpeqeegesa agggsgaggds aieqgggggsa lapspvsgvr regarggggrg
61 rgrwkqagrg ggvvcgrgrgr grgrgrgrgr grgrgrppsg gsglggdggg cggggsgggg
121 aprrepvpfp sgsagpgprg pratesgkrm dcpalppgwk keevirksgl sagksdvyyf
181 spsgkkfrsk pqlarylgnt vdlssfdfrt gkmmpsklqk nkqrlrndpl nqnklrwnt
241 rpapwhalsr lcillrcllc lecaypplph lvnsyssktq lhclhlweac paysrqnqsf
301 pp
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☐ 1: Nature 1999 Feb 18;397(6720):568-9

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nature

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Cedar H, Verdine GL.

Publication Types:

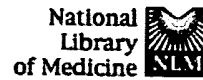
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☐ 1: Proc Natl Acad Sci U S A 1999 May 25;96(11):5894-6

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Wolffe AP, Jones PL, Wade PA.

Laboratory of Molecular Embryology, National Institute of Child Health and Human Development, National Institutes of Health, Bethesda, MD 20892-5431, USA.

Publication Types:

- Comment
- Review
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